

Remarks

Reconsideration of the above-identified application in view of the present amendment is respectfully requested. By the present amendment, claims 1, 17, 32, and 42 have been amended to include the limitations that the biodegradable material consists essentially of a polyhydroxyalkanoate resin, the polyhydroxyalkanoate resin being a homo-polymer or copolymer of hydroxyalkanoate monomer units selected from the group consisting of 3-hydroxybutyrate, 3-hydroxyvalerate, 3-hydroxyoctanoate, 4-hydroxybutyrate, 5-hydroxyvalerate, 5-hydroxycaproate, 6-hydroxycaproate, 6-hydroxycaprylate, and 6-hydroxypropionate. Support for these limitations can be found in claims 2, 18, and 33. Claims 2, 18, and 33 have been cancelled.

Below is a discussion of the 35 U.S.C. §112 rejection of claims 1-46, the 35 U.S.C. §102(e) rejection of claims 1-11 and 13, the 35 U.S.C. §103 rejection of claim 12, the 35 U.S.C. §103 rejection of claims 14-16, the 35 U.S.C. §103 rejection of claims 17, 19, 32, and 42, the 35 U.S.C. §103 rejection of claims 18, 20-30, 33-41, and 43-45, and the 35 U.S.C. §103 rejection of claims 31 and 46.

1. 35 U.S.C. §112 rejection of claims 1-46.

Claims 1-46 were rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Claims 1, 17, 32, and 42, which comprise the independent claims of the invention, have been amended to remove the language relating to a fiber, continuous matrix, or filler material. Accordingly, withdrawal of the 35 U.S.C. §112 rejection of claims 1-46 is respectfully requested.

2. 35 U.S.C. §102(e) rejection of claims 1-11 and 13.

Claims 1-11 and 13 were rejected as being anticipated by U.S. Patent No. 6,342,402 to Buchanan et al. The Office Action states with respect to claims 1 and 2

that Buchanan et al. disclose a vehicle component at column 15, lines 18-21 comprising a biodegradable material. The biodegradable material can include polyhydroxyalkanoate. Claim 1, as noted above, has been amended. As amended, claim 1 recites a vehicle component that comprises a biodegradable material consists essentially of a polyhydroxyalkanoate resin. The polyhydroxyalkanoate resin is a homo-polymer or copolymer of hydroxyalkanoate monomer units selected from the group consisting of 3-hydroxybutyrate, 3-hydroxyvalerate, 3-hydroxyoctanoate, 4-hydroxybutyrate, 5-hydroxyvalerate, 5-hydroxycaproate, 6-hydroxycaproate, 6-hydroxycaprylate, and 6-hydroxypropionate.

Claim 1 is patentable over Buchanan et al. because Buchanan et al. do not teach a biodegradable material that consists essentially of a polyhydroxyalkanoate resin.

Buchanan et al. teach cellulose esters can form binary or ternary blends with aliphatic polyesters and aliphatic-aromatic copolyesters. (Column 7, lines 25-40). One type of aliphatic polyester listed is a polyhydroxyalkanoate. (Column 10, lines 15-31). Biodegradable additives for the binary and ternary blends can include microcrystalline cellulose and carbohydrates. (Column 10, lines 58-63). The blends can be used in molded parts, non-wovens, wovens and foamed objects, such as automotive trim. (Column 14, lines 41-45). One example of such a part is listed as automotive trim. (Column 15, lines 21).

The biodegradable material recited in claim 1, however, do not comprise a blend of cellulose esters and polyhydroxyalkanoates. Claim 1 recites that biodegradable material consists essentially of a polyhydroxyalkanoates resin. In contrast, Buchanan et al. teach that the polyhydroxyalkanoate is blended with a cellulose ester and that this blend can be used as a fiber or in a composite. Accordingly, Buchanan et al. do not teach a biodegradable material that consists essentially of the polyhydroxyalkanoate resin. Thus, Buchanan et. al. do not teach all

of the limitations Claim 1. Therefore, withdrawal of the rejection of claim 1 is respectfully requested.

Claims 2-11 and 13 depend either directly or indirectly from claim 1. Claims 2-13 should therefore be allowable for the aforementioned deficiencies of the rejection with respect to claim 1 and for the specific limitations recited in claims 2-13.

3. 35 U.S.C. §103 rejection of claim 12.

Claim 12 was rejected under 35 U.S.C. §103 as being unpatentable in view of Buchanan et al. and Noda et al. The Office Action suggests that Buchanan et al. do not specify the PHA as PHBV, while Nodal et al. shows this feature in Column 4, line 39. The Office Action argues that one of ordinary skill in the art would include this polymer from Noda et al. to produce certain desired characteristics in the finished product.

Claim 12 is allowable over Buchanan et al. in view of Noda et al. because Buchanan et al. teach that the polyhydroxyalkanoate is blended with a cellulose ester and that this blend can be used as a fiber or in a composite. In contrast, the biodegradable material recited in claim 12 consists essentially of a polyhydroxyalkanoate. Assuming arguendo, that Noda teaches that additional polyhydroxyalkanoates can be used in Buchanan et al., Buchanan et al. would still teach that these polyhydroxyalkanoate be blended with a cellulose ester, which would not meet claim 12. Thus, claim 12 is allowable over Buchanan et al. in view of Noda et al. Therefore, allowance of claim 12 is respectfully requested.

4. 35 U.S.C. §103 rejection of claims 14-16.

Claims 14-16 were rejected under 35 U.S.C. §103 as being obvious over Buchanan et al. in view of Willett et al. The Office Action suggests that Buchanan et al. do not teach a biodegradable material that includes a filler, but Willett et al. teach that it would be obvious to include a filler material.

Claims 14-16 are patentable over Buchanan et al. in view of Willett et al. because Buchanan et al. in view of Willett et al. do not teach a biodegradable material that consists essentially of a polyhydroxyalkanoate resin. Buchanan et al., as discussed above, teach a blend of a polyhydroxyalkanoate and a cellulose ester material. Willett et al. do not teach or suggest polyhydroxyalkanoate materials. Thus, Buchanan et al. and Willett et al. do not teach or suggest a biodegradable material that consists essentially of a polyhydroxyalkanoate resin. Therefore, withdrawal of the rejection of claims 14-16 is respectfully requested.

5. 35 U.S.C. §103 rejection of claims 17, 19, 32, and 42.

Claims 17, 19, 32, and 43 were rejected under 35 U.S.C. §103 as being obvious over Warnez et al. in view of Buchanan et al. The Office Action suggests that Warnez et al. disclose a canister and air bag, but does not state that either element is biodegradable. Buchanan et al. discloses automotive components comprising polyhydroxyalkanoate.

As discussed above, claim 17 was amended to include the limitation that at least one of the vehicle occupant protection device or the reaction canister includes at least one of a fiber, a continuous matrix, a filler, or a cellular material. The fiber, the continuous matrix, the filler, or the cellular material consists essentially of a polyhydroxyalkanoate resin.

Claim 17 is patentable over Buchanan et al. in view of Warnez et al. because Buchanan et al. in view of Warnez et al. do not teach a reaction canister or a vehicle occupant protection device that comprises at least one of a fiber, a continuous matrix, a filler, or a cellular material that consists essentially of a polyhydroxyalkanoate resin.

As discussed above with respect to claim 1, Buchanan et al. teach a blend of cellulose esters and a polyhydroxyalkanoate resin can be used as automotive trim. Buchanan et al. do not teach or suggest a reaction canister or a vehicle occupant protection device can comprise a fiber, a continuous matrix, a filler, or a cellular

material that consists essentially of a polyhydroxyalkanoate resin. Warnez et al., also, do not teach or suggest a reaction canister or a vehicle occupant protection device can comprise a fiber, a continuous matrix, a filler, or a cellular material that consists essentially of a polyhydroxyalkanoate resin. Thus, claim 17 is allowable for the same reasons as claim 1 and for the specific limitations recited in claim 17. Therefore, withdrawal of the rejection of claim 17 is respectfully requested.

Claim 19 depends from claim 17 and, therefore, should be allowable for the same reasons as claim 17 and for the specific limitations recited in claim 19.

Claims 32 and 42 contain similar limitations as claim 17 and, therefore, should be allowable for the same reasons as claim 17 and for the specific limitations recited in claims 32 and 42.

6. 35 U.S.C. §103 rejection of claims 18, 20-30, 33-41, and 43-45.

Claims 18, 20-30, 33-41, and 43-45 were rejected under 35 U.S.C. §103 as being unpatentable over Warnez et al. in view of Buchanan et al., and in further view of Noda and Hansen. The Office Action suggests that the combination of these references disclose the recited elements, for the rationales previously discussed in the Office Action.

Claims 18, 20-30, 33-41, and 43-45 depend either directly or indirectly from claims 17, 32 and 42. Claims 18, 20-30, 33-41, and 43-45 are patentable over Warnez et al. in view of Buchanan et al., and in further view of Noda et al. and Hansen because of the aforementioned deficiencies of the rejection discussed with respect to claims 17, 32, and 42. Thus, claims 18, 20-30, 33-41, and 43-45 are allowable for the same reasons as claim 17, 32, and 42 and for the specific limitations recited in claims 18, 20-30, 33-41, and 43-45.

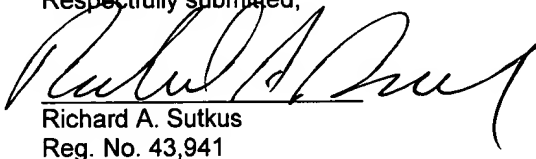
7. 35 U.S.C. §103 rejection of claims 31 and 46.

Claims 31 and 46 were rejected under 35 U.S.C. §103 as being obvious over Warnez et al. in view of Buchanan et al., Noda, and Hansen, and further in view of Sinclair et al. The Office Action suggests that the previous patents do not disclose a Mullen burst specification, while Sinclair et al. suggest certain ranges of the Mullen strength and elastic modulus produce certain characteristics and that it would be obvious to one of ordinary skill in the art to include these characteristics.

Claims 31 and 46 depend respectively from claims 17 and 42. Claims 31 and 46 are patentable over Warnez et al. in view of Buchanan et al., Noda, and Hansen, and further in view of Sinclair et al. because of the aforementioned deficiencies of the rejection discussed with respect to claims 17 and 42. Thus, claims 31 and 46 are allowable for the same reasons as claim 17 and 42 and for the specific limitations recited in claims 31 and 46.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Respectfully submitted,



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